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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,399	08/23/2001	Michael Barnes	A4944/139900	9940

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APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

MOORE, KARLA A

ART UNIT PAPER NUMBER

1763

DATE MAILED: 10/28/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,399

Applicant(s)

BARNES ET AL.

Examiner

Karla Moore

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 16-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-15, in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 1 recites the limitation "the atmospheric deposition station in line 6-7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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6. Claims 1-2 and 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,501,739 to Yamada et al.
7. Yamada et al. disclose an apparatus for processing semiconductor substrates in Figure 1, the apparatus comprising: a first atmospheric deposition station (37; column 4, rows 11-15); a second atmospheric deposition station (26, column 3, rows 17-32) comprising an atmospheric pressure vapor deposition chamber, wherein the first atmospheric station and the second atmospheric deposition station are coupled together (chambers form an in-line apparatus); and a substrate handling system (23) adapted to transfer substrates between the first atmospheric deposition station and the second atmospheric deposition station.
8. With respect to claim 2, the first atmospheric deposition station comprises a spin coating chamber (column 4, row 66 through column 5, row 3).
9. With respect 6, the apparatus further comprises curing stations (24 and 30; column 3, rows 20-22 and 39-41). Although the chambers are described as a heating and a cooling chamber by Yamada, they can also be considered to be curing chambers, where "cure" is defined by Merriam-Webster as "to prepare or alter especially by chemical or physical processing for keeping or use".
10. With respect to claim 7, the substrates processed are semiconductor substrates (column 1, rows 6-10).
11. With respect to claim 8, the courts have ruled that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex Parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
12. With respect to claim 9, the atmospheric vapor deposition chamber is an atmospheric chemical vapor deposition chamber (column 3, rows 17-18).
13. With respect to claim 10, the first atmospheric deposition station comprises a liquid dispenser (61; column 4, row 66 through column 5, row 3).
14. Claims 1, 3 and 6-10 rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,451,118 to Garriga.

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15. Garriga discloses an apparatus for processing semiconductor substrates in Figure 5, the apparatus comprising: a first atmospheric deposition station (550 or 552; column 6, rows 48-54); a second atmospheric deposition station (554 or 556) comprising an atmospheric pressure vapor deposition chamber (column 5, rows 45-49 and column 6, rows 34-38), wherein the first atmospheric station and the second atmospheric deposition station are coupled together; and a substrate handling system (516 and 518) adapted to transfer substrates between the first atmospheric deposition station and the second atmospheric deposition station.

16. With respect to claims 3 and 6, any of the four atmospheric deposition stations may be configured to comprise an ultrasonic spray deposition device (column 5, rows 55-57) or a curing station (column 5, rows 50-54). Although the "curing station" is described as a "heating" station by Garriga, it can also be considered to be a curing chamber, where "cure" is defined by Merriam-Webster as "to prepare or alter especially by chemical or physical processing for keeping or use".

17. With respect to claim 7, the substrates processed are semiconductor substrates (claim 16).

18. With respect to claim 8, the courts have ruled that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex Parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

19. With respect to claim 9, the atmospheric vapor deposition chamber is an atmospheric chemical vapor deposition chamber (column 5, rows 45-49).

20. With respect to claim 10, though not explicitly disclosed, the first atmospheric deposition station would inherently comprise a liquid dispenser for any liquid treatment to be performed on the substrate (column 5, rows 40-44 and column 5, rows 29-33).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 4, 11 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. as applied to claims 1-2 and 6-10 above, and further in view of U.S. Patent No. 5,578,130 to Hayashi et al.

23. Yamada et al. disclose the invention substantially as claimed and as described above.

24. With respect to claim 14, Yamada et al. further disclose the apparatus configured as a cluster tool in Figure 8.

25. With respect to claim 15, as noted above, the courts have ruled that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex Parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

26. However, Yamada et al fails to teach a plasma system associated with the atmospheric chemical vapor deposition chamber.

27. Hayashi et al. teach the use of a plasma system associated with an atmospheric chemical vapor deposition system for the purpose forming coatings for hardening or improving the surface of plastic, glass, or an organic photo sensitive body, or for the prevention of reflection of a surface (column 1, rows 45-60).

28. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a plasma system associated with the an atmospheric chemical vapor deposition system in Yamada et al. in order to form coatings for hardening or improving the surface of plastic, glass, or an organic photo sensitive body, or for the prevention of reflection of a surface as taught by Hayashi et al.

29. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 4, 11 and 14-15 above, and further in view of U.S. Patent No. 5,337,362 to Imahashi.

30. The prior art discloses the invention substantially as claimed and as described above.

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31. However, the prior art fails to teach a remote plasma system adapted to generate a plasma upstream of the atmospheric chemical vapor deposition chamber.

32. Imahashi et al. teach the use of a remote plasma system associated with a deposition chamber in a multiple chamber system for the purpose of preventing ions from being supplied to the deposition chamber and causing damage to a substrate (column 2, rows 42-47 and column 6, rows 14-34).

33. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a remote plasma system in the prior art in order to prevent ions from being supplied to a deposition chamber and causing damage to a substrate as taught by Imahashi et al.

34. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 4, 11 and 14-15 above, and further in view of U.S. Patent No. 5,151,008 to Ishida et al.

35. The prior art discloses the invention substantially as claimed and as described above.

36. However, the prior art fails to teach a substrate handling system comprising a plurality of substrate handlers with arms.

37. Ishida et al. teaches the use of a substrate handling system comprising a plurality of substrate handlers with arms for the purpose of providing a substrate handling system which is capable of efficiently conducting a transfer operation for substrates such as semiconductor wafers within the processing equipment without reciprocatingly moving the transfer handlers many times and causing the processing time to become long (column 1, rows 39-43 and column 1, row 65 through column 2, row 10).

38. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a substrate handling system with a plurality handlers in the prior art in order to provide a substrate handling system capable of efficiently conducting a transfer operation without reciprocatingly moving the transfer handlers many times causing the processing time to become long as taught by Ishida et al.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

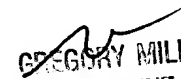
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km
October 23, 2002


GREGORY MILLS
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 1700